

Elevation QC Report

Project: OR_RogueValley_2009 **Contractor:** Watershed Sciences
Data Delivery Date: 04/20/2011 **Date Data Reviewed:** 06/14/2011-06/15/2011
Reviewer: Kim Robinson **Total Square Miles Reviewed:** 2203.009 square miles
Elevation Type: LIDAR **Format:** LAS **Grid Spacing:** 3.00 intl feet **Tile size:** 7.5' by 7.5'
Projection: LCC **Zone:** **Datum:** NAD83 **Units:** International Feet
Licensing: Public Domain **Metadata:** Project Level

Materials Received:

LAS

All_Points (classified LAS)
Grounds (Bare Earth LAS)

Shapefiles:

Ground Control Points (Medford_RTK_UTM10.shp)
Tiling Scheme Shapefile for LAS (Medford_0_75_Quads.shp)
7.5 minute tile quad shapefile of project area (Medford_7_5_Quads.shp)
Project Footprint Shapefile (Medford_Study_Area.shp)
MEDFORD_Processing_BINS_UTM10.shp

Rasters:

Digital Elevation Models (DEM's)
Ground Density Rasters
Intensity files
Highest Hit (1st returns)

Metadata:

DEM metadata (xml format)
Metadata for all shapefiles delivered (xml format)
Metadata for all other delivered rasters (xml format)
Data report for entire project (.doc and .pdf format)
Measure Match for flightlines (.txt and .xlsx format)

Vertical Accuracy Test Performed: No **Test Point Source:** None **RMSE:** See below

Vertical Accuracy Notes:

Reviewer was unable to conduct a Vertical Accuracy test due to a lack of check points that were of a higher accuracy than the LiDAR data.

Vertical Accuracy of the data was calculated by the contractor. Contractor used Real Time Kinematic (RTK) ground survey points. Reviewer approves collection method, distribution, and amount of points collected for this dataset. There were 2,661 well distributed RTK points.

Reported RMSE is 0.16 feet or 0.05 meters.

QC Review Summary:

Deliverables:

All deliverables were received.

Metadata:

Metadata for the DEM datasets were run through the the Metadata Parser in ArcCatalog. While general information is included and the metadata files reference the FGDC Content Standards for Digital Geospatial Metdata, the metadata parser came up with 25 errors. Metadata is in xml format. These errors will be detailed later in this document.

Digital Elevation Models:

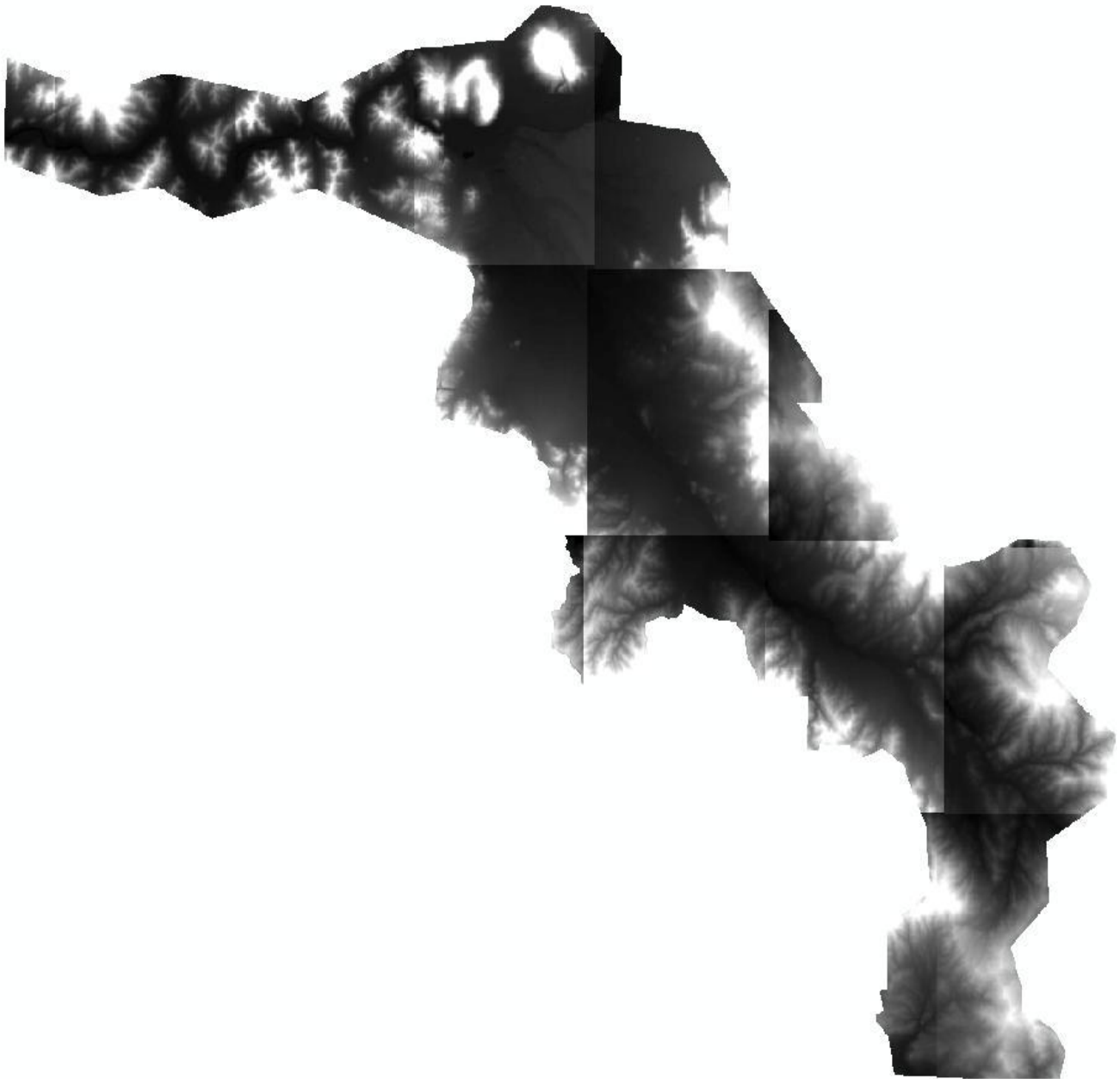
Reviewer loaded the ArcGrids into a Global Mapper Catalog for review. Reviewer used Lambert Conformal Conic projection in the review. The data was examined at an average scale of 1:4100 throughout the project area.

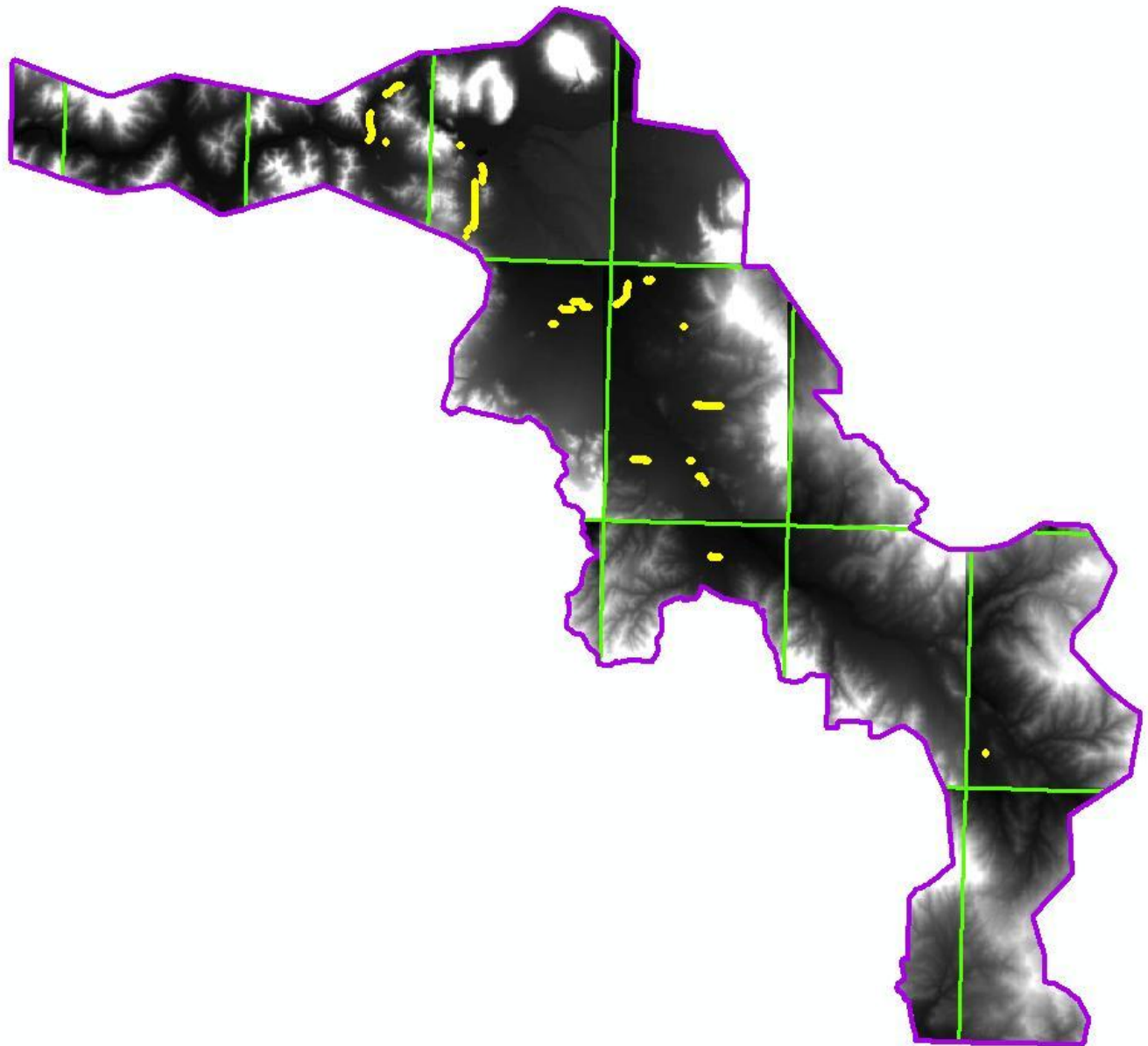
There was no requirement for treatment of waterbodies or double line streams, therefore waterbodies are not flattened and double line streams have not been forced to drain downhill. Reviewer created a shapefile showing waterbodies that have not been flattened for reference purposes. An example will be provided below.

Reviewer noticed some other potential errors in the data. The first of these errors occur where buildings have been removed. Where most buildings removed, a flat "tinning" is observed, however, there are several cases where there were points above the surface and pits in an otherwise relatively flat surface. Reviewer created a shapefile at these areas. Examples will be shown below. The second error the reviewer noticed was excessive "tinning" across a road. This may be due to the removal of bare earth points that should be kept in this area. Reviewer included this in the shapefile of errors. A picture of this issue will be shown below.

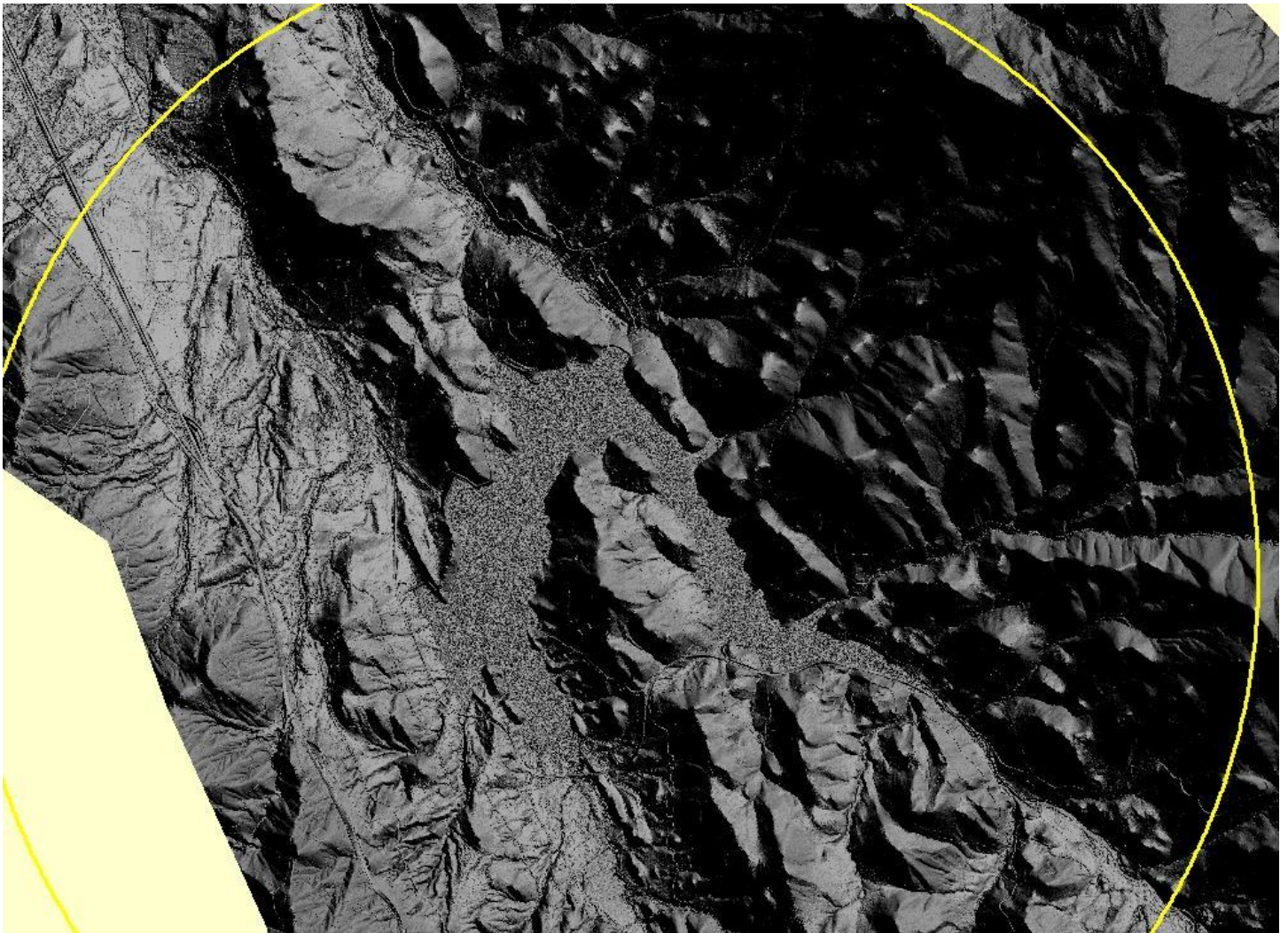
Based on the errors found, reviewer has asked that the data be re-examined.

OLC-OR ROGUEVALLEY 2009 Project Area



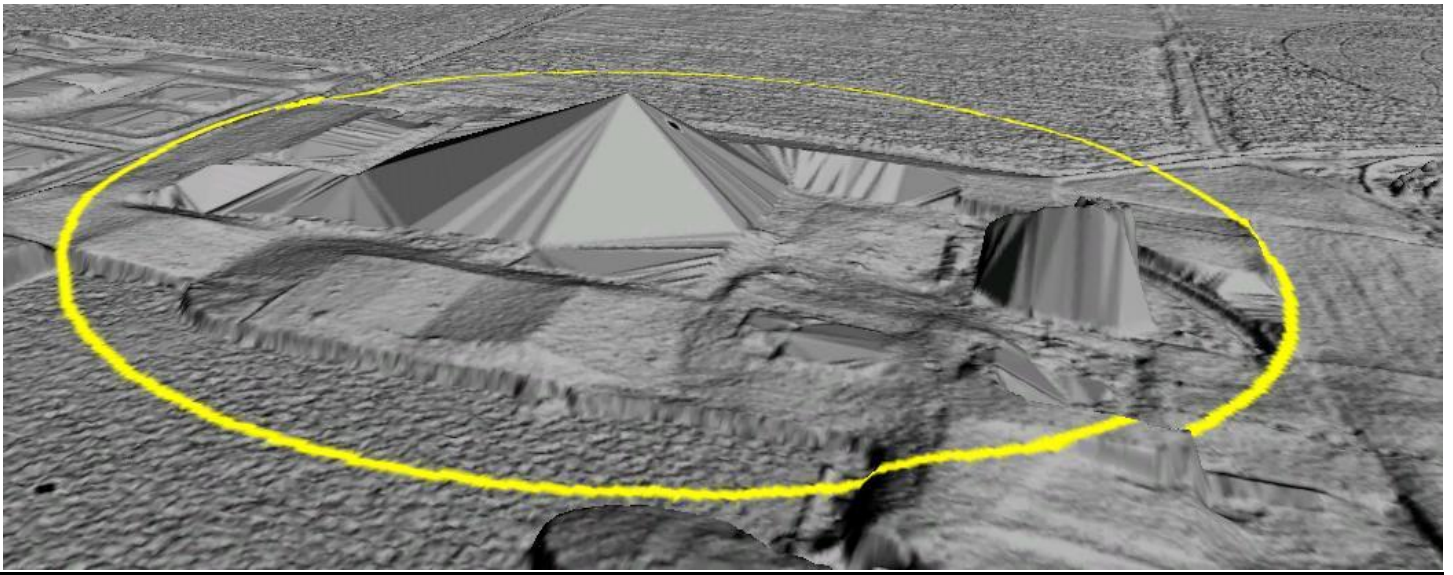


OLC-OR ROGUEVALLEY 2009: Example of Water Body Not Flattened

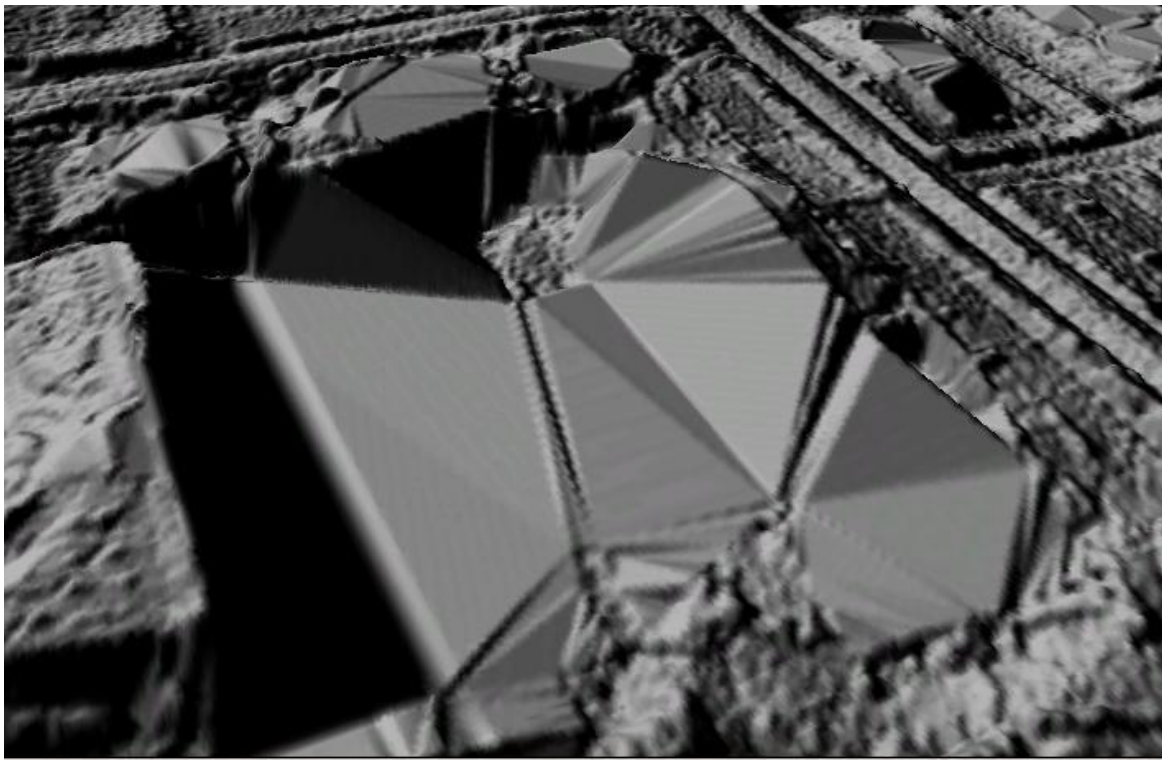




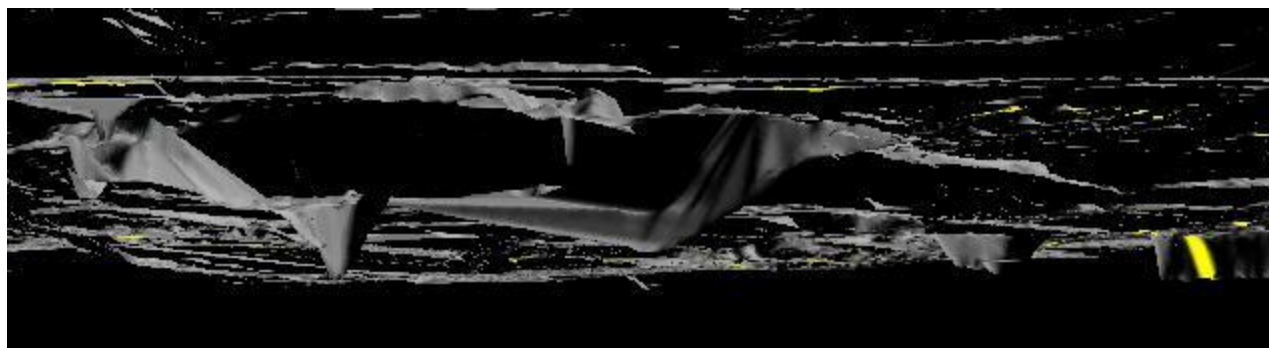
OLC-OR ROGUEVALLEY 2009: Example of Building Level Issue with NAIP Imagery in 3 D
(same building as above example)



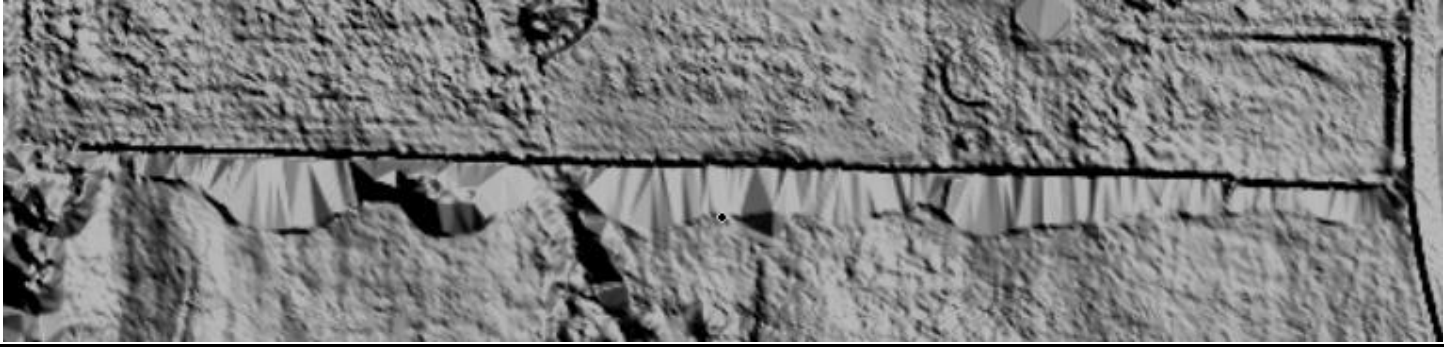
OLC-OR ROGUEVALLEY 2009: Example of Building Level Issue: Pits



OLC-OR ROGUEVALLEY 2009: Example of Building Level Issue: Pits in 3D



OLC-OR ROGUEVALLEY 2009: Example of Possible Bare Earth LAS Points Removed:



OLC-OR ROGUEVALLEY 2009: Errors Found in Metadata Parser

```
Executing: mp "E:\LIDAR\Over the Fence\Oregon\OLC_Rogue-Valley-2009\metadata.xml" # # #
Start Time: Wed Jun 15 14:57:00 2011
Running script mp...
"C:\ArcGIS\bin\mp.exe" metadata.xml 2>&1
mp metadata.xml
: mp 2.9.6 - Peter N. Schweitzer (U.S. Geological Survey)
: Info: input file = metadata.xml

: Error (line 10): improper value for Publication_Date
: Error (line 22): improper value for Beginning_Date
: Error (line 22): improper value for Ending_Date
: Error (line 48): Place_Keyword_Thesaurus is required in Place
: Error (line 83): Horizontal_Positional_Accuracy_Report is required in
Horizontal_Positional_Accuracy
: Error (line 84): Horizontal_Positional_Accuracy_Value is required in
Quantitative_Horizontal_Positional_Accuracy_Assessment
: Error (line 88): Vertical_Positional_Accuracy_Report is required in
Vertical_Positional_Accuracy
: Error (line 90): improper value for Vertical_Positional_Accuracy_Value
: Error (line 96): Process_Date is required in Process_Step
: Error (line 101): Process_Date is required in Process_Step
: Error (line 136): Entity_Type_Label is required in Entity_Type
: Error (line 136): Entity_Type_Definition is required in Entity_Type
: Error (line 136): Entity_Type_Definition_Source is required in Entity_Type
: Error (line 146): Attribute_Definition is required in Attribute
: Error (line 146): Attribute_Definition_Source is required in Attribute
: Error (line 146): Attribute_Domain_Values is required in Attribute
: Error (line 149): Attribute_Definition is required in Attribute
: Error (line 149): Attribute_Definition_Source is required in Attribute
: Error (line 149): Attribute_Domain_Values is required in Attribute
: Error (line 154): Distribution_Liability is required in Distribution_Information
: Error (line 156): Contact_Voice_Telephone is required in Contact_Information
: Error (line 161): Address_Type is required in Contact_Address
: Error (line 171): Fees is required in Standard_Order_Process
: Error (line 172): Digital_Transfer_Option is required in Digital_Form
: Error (line 173): Format_Name is required in Digital_Transfer_Information
: 25 errors: 21 missing, 4 bad_value
Completed script mp...
Executed (mp) successfully.
End Time: Wed Jun 15 14:57:00 2011 (Elapsed Time: 0.00 seconds)
```